1. (Canceled)

2. (New) A pump system comprising:

a power source;

a pump;

an electromagnet assembly that drives the pump;

a controller that controls the power source to power the electromagnetic assembly with periodic electronic pulses, and that monitors a signal produced in the electromagnet to determine when a next electronic pulse will occur; and

a sensor that senses an impulse response of the pump to the electronic pulses so that at least one of an amplitude and frequency component of an oscillation can be detected.

3. (New) The pump system of claim 2, further comprising the controller driving the pump system to pump a gas so that the at least one of the amplitude and frequency component is reflective of a pumping load.

4. (New) The pump system of claim 3, further comprising the controller continuously determining a value using the at least one of the amplitude and frequency component that is reflective of the pumping load.

5. (New) The pump system of claim 4, further comprising the controller using the value to increase or decrease a width of the next periodic electronic pulse so that a pump pressure can be controlled.

6. (New) The pump system of claim 5, further comprising the controller using the value to increase or decrease a width of the next periodic electronic pulse so that a pump flow rate can be controlled.

7. (New) The pump system of claim 2, further comprising the controller determining that the next electronic pulse will occur a half-cycle after a previous electronic pulse.

8. (New) The pump system of claim 2, further comprising the controller determining that the next electronic pulse will occur a full-cycle after a previous electronic pulse.

9. (New) A method of using a pump system having a power source, a pump and an electromagnet assembly comprising:

driving the pump using the electromagnet assembly;

controlling the power source to power the electromagnetic assembly with periodic electronic pulses, and monitoring a signal produced in the electromagnet assembly to determine when a next electronic pulse will occur; and

sensing an impulse response of the pump to the electronic pulse so that at least one of an amplitude and frequency component of an oscillation can be detected.

10. (New) The method of claim 9, further comprising controlling the pump system to pump a gas so that the at least one of the amplitude and frequency component is reflective of a pumping load.

11. (New) The method of claim 10, further comprising continuously determining a value using the at least one of the amplitude and frequency component that is reflective of the pumping load.

12. (New) The method of claim 11, further comprising using the value to increase or decrease a width of the next periodic electronic pulse so that a pump pressure can be controlled.

13. (New) The method of claim 12, further comprising using the value to increase or decrease a width of the next periodic electronic pulse so that a pump flow rate can be controlled.

14. (New) The pump system of claim 9, further comprising determining that the next electronic pulse will occur a half-cycle after a previous electronic pulse.

15. (New) The pump system of claim 9, further comprising the controller determining that the next electronic pulse will occur a full-cycle after a previous electronic pulse.

16. (New) A method pumping a gas comprising:

driving a pump using an electromagnet assembly;

controlling a power source to power the electromagnetic assembly with periodic electronic pulses, and monitoring a signal produced in the electromagnet assembly to determine when a next electronic pulse will occur; and

sensing an impulse response of the pump to the electronic pulses so that at least one of an amplitude and frequency component of an oscillation can be detected.

17. (New) The method of claim 16, further comprising pumping a gas so that the at least one of the amplitude and frequency component is reflective of a pumping load.

18. (New) The method of claim 17, further comprising continuously determining a value using the at least one of the amplitude and frequency component that is reflective of the pumping load.

19. (New) The method of claim 18, further comprising using the value to increase or decrease a width of the next periodic electronic pulse so that a pump pressure can be controlled.